

Routine Subtyping of *Salmonella* Serotype typhimurium by PFGE Facilitates Focused Epidemiological Investigations in Connecticut

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Background: *Salmonella* typhimurium (ST) causes 25% of human *Salmonella* infections in the United States. Because ST is such a common serotype, public health surveillance of ST would be enhanced by routine molecular subtyping of ST isolates in state public health laboratories. Phage typing has been used for subtyping ST but is conducted only at CDC. Pulsed-field gel electrophoresis (PFGE) is commonly used for subtyping in outbreak investigations, but its routine application has not been fully evaluated.

Methods: Clinical laboratories in Connecticut forwarded human *Salmonella* isolates to the Department of Public Health laboratory for serotyping. Beginning in 1998, subtyping by PFGE was routinely performed on all ST isolates. Selected isolates were sent to CDC, for antimicrobial susceptibility and phage typing.

Results: In 1998, 139 (28%) of 502 *Salmonella* isolates were ST; .3 per 100,000 population. Although 56 PFGE patterns were identified among the 139 ST isolates, 40 (29%) of the isolates had an identical pattern. Seven of the 40 isolates were selected for further testing; all were resistant to ampicillin, chloramphenicol, streptomycin, sulfonamides and tetracycline (R-type ACSSuT), and 5 (71%) were phage typed as members of the DTIO4 complex.

Conclusion: Routine use of PFGE led to the recognition of a *Salmonella* Typhimurium strain, DTIO4 (R-type ACSSuT), that accounts for 29% of all Connecticut isolates. Investigations are ongoing to determine possible sources of these infections. PFGE is a useful tool for ST subtyping at state health departments to rapidly identify clusters and facilitate focused epidemiologic investigations.

Suggested citation:

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